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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,484	11/20/2003	Alex Chen	TUC920030137US1	2508
49080	7590	08/22/2006	EXAMINER	
DALE F. REGELMAN 4231 S. FREMONT AVENUE TUCSON, AZ 85714			MARTINEZ, DAVID E	
			ART UNIT	PAPER NUMBER
			2181	

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/719,484

Applicant(s)

CHEN ET AL.

Examiner

David E. Martinez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☒ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/15/04, 5/26/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION*****Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1-30 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-19 of copending Application No. 10/779,215. Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter disclosed in the instant application is fully disclosed and anticipated by copending Application no. 10/779,215. Claim 1 of the copending application only distinguishes itself from Claim 1 of the instant application by reciting the details for generating a PPRC task which comprises a first flag set to "off", generating a PPRC request comprising a second flag set to "on", and providing the PPRC request to an (i)th adapter. Claim 1 of the copending application as shown in the table below contains every element of claim 1 of the instant application and as such anticipates claim 1 of the instant application.

Later filed Copending Application – 10/779,215	Instant Application – 10/719,484
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1. A method to implement retry algorithms when providing information from a first information storage and retrieval system to a second information storage and retrieval system, comprising the steps of:	1. A method to provide information from a first information storage and retrieval system to a second information storage and retrieval system, comprising the steps of:
providing a first information storage and retrieval system, wherein said first information storage and retrieval system comprises (N) PPRC adapters and information, and wherein said first information storage and retrieval system is capable of communicating with one or more host computers;	providing a first information storage and retrieval system, wherein said first information storage and retrieval system comprises (N) PPRC adapters and information; <i>(although silent as to the 1<sup>st</sup> information storage and retrieval system communicating with a host computer, the limitation just below shows the 1<sup>st</sup> communicating system in fact communicates with a host (i.e. a 2<sup>nd</sup> information storage and retrieval system receives information from the 1<sup>st</sup> information storage and retrieval system))</i>
providing a second information storage and retrieval system, wherein said second information storage and retrieval system is capable of receiving said information from said first information storage and retrieval system via one or more of said (N) PPRC adapters;	providing a second information storage and retrieval system, wherein said second information storage and retrieval system is capable of receiving said information from said first information storage and retrieval system via one or more of said (N) PPRC adapters;
generating an Established Path Bitmap, wherein said Established Path Bitmap recites said (N) PPRC adapters;	generating an Established Path Bitmap, wherein said Established Path Bitmap recites said (N) PPRC adapters;
generating an Available Path Bitmap;	generating an Available Path Bitmap;

ascertaining, for each value of (j), if the (j)th PPRC adapter is in communication with said secondary information storage and retrieval system, wherein (j) is greater than or equal to 1 and less than or equal to (N);	ascertaining, for each value of (j), if the (j)th PPRC adapter is in communication with said second information storage and retrieval system, wherein (j) is greater than or equal to 1 and less than or equal to (N);
operative if the (j)th PPRC adapter is in communication with said secondary information storage and retrieval system, adding said (j)th adapter to said Available Path Bitmap;	operative if the (j)th PPRC adapter is in communication with said second information storage and retrieval system, adding said (j)th adapter to said Available Path Bitmap;
saving said Available Path Bitmap, wherein said Available Path Bitmap recites (M) PPRC adapters, wherein each of said (M) PPRC adapters is in communication with said secondary information storage and retrieval system, and wherein (M) is less than or equal to (N);	saving said Available Path Bitmap, wherein said Available Path Bitmap recites (M) PPRC adapters, wherein each of said (M) PPRC adapters is in communication with said second information storage and retrieval system, and wherein (M) is less than or equal to (N).
	<b>Claim 2:</b> 2. The method of claim 1, further comprising the steps of:
generating a PPRC task <b>which comprises a first flag, wherein said first flag to set to "off";</b>	generating a PPRC task;
copying said Available Path Bitmap as a Working Bitmap;	copying said Available Path Bitmap as a Working Bitmap;
generating a PPRC request comprising a <b>second flag; setting said second flag to "on";</b>	

selecting the (i)th adapter from said Working Bitmap, wherein (i) is greater than or equal to 1 and less than or equal to (M), and wherein (i) is initially set to 1;	selecting the (i)th adapter from said Working Bitmap, wherein (i) is greater than or equal to 1 and less than or equal to (M), and wherein (i) is initially set to 1;
<b>providing said PPRC request to said (i)th adapter;</b>	
attempting to provide said information to said second information storage and retrieval system using said (i)th adapter.	attempting to provide information to said second information storage and retrieval system using said (i)th adapter.

With regards to independent claims 11 and 21 of the instant application, they pertain to an article of manufacture and to a computer program product that implement similar limitations to claim 1 of the instant application. Claims 11 and 21 are also anticipated by independent claims 8 and 14 (an article of manufacture and a computer program product) of the copending application thus are rejected under the same rationale as claim 1 above.

With regards to claims 2-10, 12-20 and 22-30, due to their dependency from independent claims 1, 11 and 21, they are rejected for the same reasons set forth above and they are also anticipated by the dependent claims 2-7, 9-13 and 15-19 of copending application thus rejected under the same rationale.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 112 – 1<sup>st</sup> paragraph***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The written description does not describe what a "PPRC adapter" is, nor what a "bitmap" is.

Although the specification mentions the term "peer to peer remote copy", it fails to equate that term to "PPRC" thus it fails to describe what the acronym stands for. A PPRC doesn't necessarily have to stand for "peer to peer remote copy". An attempt was made to find an explanation for the acronym/term in the specification to no avail.

As for the word "bitmap", the specification fails to describe the word. It is not clear what the term is supposed to represent out of its many common definitions. It could represent a picture such as a GIF or JPEG, a mapping of any kind, a hash table, a regular table, an array, or a linked list – all of which are totally different things. An attempt was made to find a definition in the specification to no avail either.

3. Claims 1-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Since the specification has not shown what exactly a PPRC adapter is, or what a bitmap is, the subject matter fails to enable one of ordinary skill in the art to make/use the invention.

The written description does not enable one of ordinary skill in the art how to apply a "PPRC adapter" is, nor a "bitmap". Although the specification mentions the term "peer to peer remote copy", it fails to equate that term to "PPRC" thus it fails to describe what the acronym stands for. A PPRC doesn't necessarily have to stand for "peer to peer remote copy". An attempt was made to find an explanation for the acronym/term in the specification to no avail.

As for the word "bitmap", the specification fails to enable one of ordinary skill in the art to implement the invention due to the numerous common definitions to the word thus not making it clear which version of a "bitmap" to use. A "bitmap" could represent a picture such as a GIF or JPEG, a mapping of any kind, a hash table, a regular table, an array, or a linked list. An attempt was made to find a definition in the specification to no avail either.

***Claim Rejections - 35 USC § 112 – 2<sup>nd</sup> paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. With regards to claim 1, the term "a first information storage and retrieval system" in lines 1-2 and line 4, renders the claim indefinite. It is not clear if the second instance of said element is referring to the first instance of the element or if the claim is supposed to recite two distinct "first information storage and retrieval systems". Also, the term "a second information storage and retrieval system" in line 2, and recited again in line 6 renders the claim indefinite for the same reasons.

Furthermore to claim 1, the acronym "PPRC" in the term "PPRC adapter(s)" found in lines 5, 8, 11, 13, 16 and 20, render the claim indefinite. It is not clear as to what is the meaning



of "PPRC" thus the "PPRC adapter(s)" is not well defined. An attempt was made to find an explanation for the acronym/term in the specification to no avail. Is it supposed to be a network adapter such as a NIC card or perhaps some sort of host bus adapter (HBA card)?

Also in claim 1, the use of the word "bitmap" renders the claim indefinite. It is not clear what the term is supposed to represent out of its many definitions. It could represent a picture such as a GIF or JPEG, a mapping of any kind, a hash table, a regular table, an array, or a linked list. An attempt was made to find a definition in the specification to no avail either.

5. With regards to claims 2, 4, 5, 6, 7, 8, 9, 10, they recite many instances (too numerous to point out) of the limitations "(i)th adapter" and "(k)th adapter". There is insufficient antecedent basis for this limitation in the claim. Are they supposed to be referring back to "PPRC adapter(s)" or some other kind of adapter that was not previously claimed?

6. With regards to independent claims 11 and 21, they suffer from similar deficiencies as those of claim 1 above and thus are rejected under the same rationale.

7. With regards to claims 12, 14-20 and 22, 24-30, they recite many instances (too numerous to point out) of the limitations "(i)th adapter", "(k)th adapter", "(N) adapters" and "(M) adapters". There is insufficient antecedent basis for this limitation in the claim. Are they supposed to be referring back to "PPRC adapter(s)" or some other kind of adapter that was not previously claimed?

8. With regards to -computer program product- claims 28-30 which ultimately depend from -method- claim 1, It is not clear as to how computer program product claims 28-30, depend from method claim 6. Claims 1-6 fail to recite a "computer program product" at all. It appears that the dependency of claims 28-30 from claim 6 is a typo and perhaps they should have been dependent from claim 27 or 26 instead? Claims 28-30 recite the limitation "the computer program product". There is insufficient antecedent basis for this limitation in the claim.

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9. Claims 2-10, 12-20, and 22-30, due to their dependency from independent claims 1, 11 and 22, they suffer from the same deficiencies and their parent claims and thus are rejected under the same rationale.

Due to the number of 35 USC § 112, second paragraph rejections, the examiner has provided a number of examples of the claim deficiencies in the above rejection(s), however, the list of rejections may not be all inclusive. Applicant should refer to these rejection(s) as examples of deficiencies and should make all the necessary corrections to eliminate the 35 USC § 112, second paragraph problems and place the claims in a proper format.

Due to the vagueness and a lack of clear definiteness in the claims, the claims have been treated on their merits as best understood by the examiner.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by US Patent

Application Publication No. US 2004/0103210A1 to Fujii et al. (hereinafter Fujii).

10. With regards to claim 1, Fujii teaches a method to provide information from a first information storage and retrieval system [fig 1 any one of node elements N1-N4] to a second information storage and retrieval system [fig 1 any of node elements N1-N4], comprising the steps of:

providing a first information storage and retrieval system [fig 1 any of node elements N1-N4], wherein said first information storage and retrieval system comprises (N) PPRC adapters [fig 1 any of node elements N1-N4 are connected to the other node elements over a network link through the use of network adapters] and information [paragraph 41];

providing a second information storage and retrieval system [fig 1 any of node elements N1-N4], wherein said second information storage and retrieval system is capable of receiving said information from said first information storage and retrieval system via one or more of said (N) PPRC adapters [fig 1 any of node elements N1-N4 are connected to transmit data with other node elements over a network link through the use of network adapters – paragraph 41];

generating an Established Path Bitmap, wherein said Established Path Bitmap recites said (N) PPRC adapters [paragraphs 44-45, backup routes track available paths and thus available adapters, see also figs 4-6 “backup connection information”];

generating an Available Path Bitmap [paragraph 44, figs 4-6 “currently used paths”];

ascertaining, for each value of (j), if the (j)th PPRC adapter is in communication with said second information storage and retrieval system, wherein (j) is greater than or equal to 1 and less than or equal to (N) [paragraph 44, figs 4-6 “currently used paths” are set and used when no failure is occurring to the paths”];

operative if the (j)th PPRC adapter is in communication with said second information storage and retrieval system, adding said (j)th adapter to said Available Path Bitmap [paragraph 44, figs 4-6 “currently used paths” tracks paths in use thus ultimately adapters in use];

saving said Available Path Bitmap, wherein said Available Path Bitmap recites (M) PPRC adapters, wherein each of said (M) PPRC adapters is in communication with said second information storage and retrieval system, and wherein (M) is less than or equal to (N) [paragraph 44, figs 4-6 are saved in tables in storage element 15 of figure 3].

Claim 1 is also rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Application Publication No. US 2005/0063334 A1 to Fnu et al. (hereinafter Fnu).

11. With regards to claim 1, Fnu teaches a method to provide information from a first information storage and retrieval system [fig 1 any one of the connection units or access point elements elements 102 or 104] to a second information storage and retrieval system [fig 1 any one of the connection units or access point elements elements 102 or 104], comprising the steps of:

providing a first information storage and retrieval system [fig 1 any one of the elements 102 or 104], wherein said first information storage and retrieval system comprises (N) PPRC adapters and information [fig 1 any of the connection units or access point elements 102 or 104 are connected to transmit data with other node elements over a network link through the use of network adapters – paragraph 11];

providing a second information storage and retrieval system [fig 1 any one of the connection units or access point elements 102 or 104], wherein said second information storage and retrieval system is capable of receiving said information from said first information storage and retrieval system via one or more of said (N) PPRC adapters [fig 1 any of the connection units or access point elements N1-N4 are connected to transmit data with connection unit or access point elements over a network communication link through the use of network adapters – paragraph 11];

generating an Established Path Bitmap, wherein said Established Path Bitmap recites said (N) PPRC adapters [fig 3 – bitmap table tracks communication channels and network identifiers thus the underlying adapters as well];

generating an Available Path Bitmap [fig 3 – bitmap table is generated to track active channels and network identifiers thus tracking the underlying adapters currently in communication, paragraphs 29, 19-22];

ascertaining, for each value of (j), if the (j)th PPRC adapter is in communication with said second information storage and retrieval system, wherein (j) is greater than or equal to 1 and less than or equal to (N) [fig 3 – bitmap table is generated to track active channels thus tracking the underlying adapters currently in communication - paragraphs 29, 19-22];

operative if the (j)th PPRC adapter is in communication with said second information storage and retrieval system, adding said (j)th adapter to said Available Path Bitmap [paragraphs 29, 19-22, fig 3 bitmap table 300 is generated to track active channels and network identifiers thus tracking the underlying adapters currently in communication];

saving said Available Path Bitmap, wherein said Available Path Bitmap recites (M) PPRC adapters, wherein each of said (M) PPRC adapters is in communication with said second information storage and retrieval system, and wherein (M) is less than or equal to (N) [fig 3 bitmap table 300 is stored as channel bitmap table 214 in figure 2, paragraph 29].

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. 6,996,629 to Odenwald teaches mapping multiple paths having different ports to multiple targets.

US Patent Application Publication No. 2001/0025308 to Jinushi et al. teaches mapping states of host communication ports.

US Patent No. 6,937,611 to Ward teaches a setting bits in a channel bitmap for pending communication requests.

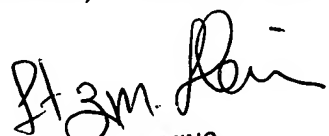
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Martinez whose telephone number is (571) 272-4152. The examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz M. Fleming can be reached on 571-272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DEM

  
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8/18/2006